

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/12/2023

Reviewed on 05/12/2023

1 Identification

- **Product identifier**
- **Trade name:** MIBK
- **Product number:** M080100
- **CAS Number:**
108-10-1
- **EC number:**
203-550-1
- **Index number:**
606-004-00-4
- **Application of the substance / the mixture** Solvents
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Kayaku Advanced Materials, Inc.
200 Flanders Road
Westborough, MA 01581
Tel: (617) 965-5511
Fax: (617) 965-5818
- **Information department:**
Product Safety
Email: productsafety@kayakuam.com
- **Emergency telephone number:**
Kayaku Advanced Materials : 617-965-5511
Chemtrec USA Emergency : 800-424-9300
Chemtrec International Emergency : 703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids 2

H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Carcinogenicity 2

H351 Suspected of causing cancer.



GHS07

Acute Toxicity - Inhalation 4

H332 Harmful if inhaled.

Eye Irritation 2A

H319 Causes serious eye irritation.

Specific Target Organ Toxicity - Single Exposure 3 H336 May cause drowsiness or dizziness.

- **Label elements**

- **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/12/2023

Reviewed on 05/12/2023

Trade name: MIBK

(Contd. of page 1)

· Hazard pictograms

· Signal word Danger
· Hazard-determining components of labeling:

Methyl isobutyl ketone

· Hazard statements

H225 Highly flammable liquid and vapor.

H332 Harmful if inhaled.

H319 Causes serious eye irritation.

H351 Suspected of causing cancer.

H336 May cause drowsiness or dizziness.

· Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P310 If swallowed: Immediately call a poison center/doctor.

P302+P352 If on skin: Wash with plenty of soap and water.

P304+P341 If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P370+P378 In case of fire: Use to extinguish: Alcohol resistant foam, Fire-extinguishing powder, Carbon dioxide.

P403+P235 Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· Classification system:
· NFPA ratings (scale 0 - 4)

· HMIS-ratings (scale 0 - 4)

· Other hazards
· Results of PBT and vPvB assessment

 · **PBT:** Not applicable.

 · **vPvB:** Not applicable.

US

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/12/2023

Reviewed on 05/12/2023

Trade name: MIBK

(Contd. of page 2)

3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
108-10-1 4-methylpentan-2-one
- **Identification number(s)**
- **EC number:** 203-550-1
- **Index number:** 606-004-00-4

4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Wash eyes immediately with a large amount of water or normal saline, occasionally lifting upper and lower eye lids until no evidence of chemical remains (about 20 minutes). Remove contact lenses if present and easy to remove. Seek immediate medical attention.
- **After swallowing:**
Do not induce vomiting unless instructed to do so by a physician. Wash out mouth with water and keep person at rest. Seek immediate medical attention.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed** Treat symptomatically.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
Alcohol resistant foam
Fire-extinguishing powder
Carbon dioxide
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Wear SCBA.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/12/2023

Reviewed on 05/12/2023

Trade name: MIBK

(Contd. of page 3)

- Ensure adequate ventilation.
- Dispose contaminated material as waste according to Section 13.
- **Reference to other sections**
 - See Section 7 for information on safe handling.
 - See Section 8 for information on personal protection equipment.
 - See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

· PAC-1:

75 ppm

· PAC-2:

500 ppm

· PAC-3:

3000* ppm

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
 - Ensure good ventilation/exhaust at the workplace.
 - Store in cool, dry place in tightly closed containers.
 - Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
 - Keep ignition sources away - Do not smoke.
 - Use explosion-proof apparatus / fittings and spark-proof tools.
 - Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and containers:** Store in a cool location.
- **Information about storage in one common storage facility:**
 - Do not store together with oxidizing and acidic materials.
 - Do not store together with alkalis (caustic solutions).
- **Further information about storage conditions:**
 - Keep container well-sealed in cool, dry location.
 - Store receptacle in a well ventilated area.
 - Store under lock and key and with access restricted to technical experts or their assistants only.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters**

· Components with limit values that require monitoring at the workplace:
108-10-1 Methyl isobutyl ketone

 PEL Long-term value: 410 mg/m³, 100 ppm

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/12/2023

Reviewed on 05/12/2023

Trade name: MIBK

(Contd. of page 4)

REL	Short-term value: 300 mg/m ³ , 75 ppm Long-term value: 205 mg/m ³ , 50 ppm
TLV	Short-term value: 307 mg/m ³ , 75 ppm Long-term value: 82 mg/m ³ , 20 ppm BEI
· Ingredients with biological limit values:	
108-10-1 Methyl isobutyl ketone	
BEI	1 mg/L Medium: urine Time: end of shift Parameter: MIBK

 · **Additional information:** The lists that were valid during the creation were used as basis.

 · **Exposure controls**

 · **Personal protective equipment:**

 · **General protective and hygienic measures:**

Keep away from food and beverages.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Do not inhale gases / fumes / aerosols.

 · **Respiratory equipment:**

In case of low exposure, use cartridge respirator. In case of intensive or longer exposure, use SCBA.

 · **Protection of hands:**


Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

 · **Material of gloves** Nitrile rubber, NBR

 · **Penetration time of glove material** Contact glove manufacture for break-through time.

 · **Eye protection:**


Tightly sealed goggles

9 Physical and chemical properties

 · **Information on basic physical and chemical properties**

 · **General Information**

 · **Appearance:**

Form: Liquid

Color: Colorless

 · **Odor:** Characteristic

 · **Odor threshold:** Not determined.

 · **pH-value:** Not determined.

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/12/2023

Reviewed on 05/12/2023

Trade name: MIBK

(Contd. of page 5)

· Change in condition	
Melting point/Melting range:	-83.5 °C (-118.3 °F)
Boiling point/Boiling range:	114 °C (237.2 °F)
· Flash point:	14 °C (57.2 °F) (クロースドカップ)
· Flammability (solid, gaseous):	Not applicable.
· Auto igniting:	460 °C (860 °F)
· Decomposition temperature:	Not determined.
· Ignition temperature:	Not determined.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Explosion limits:	
Lower:	1.7 Vol %
Upper:	9 Vol %
· Vapor pressure at 20 °C (68 °F):	8 hPa (6 mm Hg)
· Density at 20 °C (68 °F):	0.8008 g/cm ³ (6.68268 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	1.6 (BuAc=1)
· Solubility in / Miscibility with	
Water at 20 °C (68 °F):	19 g/l
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Organic solvents:	100.0 %
VOC content:	100.0 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability** Stable
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid**
Heat, flames and sparks. Extremes of temperature and direct sunlight.
Contact with incompatible materials.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** Carbon monoxide and carbon dioxide

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/12/2023

Reviewed on 05/12/2023

Trade name: MIBK

(Contd. of page 6)

11 Toxicological information

 · **Information on toxicological effects**

 · **Acute toxicity:**

 · **LD/LC50 values that are relevant for classification:**

108-10-1 Methyl isobutyl ketone

Oral	LD50	2080 mg/kg (Rat)
Dermal	LD50	1600 mg/kg (rab)
Inhalative	LC50/4 h	100 mg/l (Rat)

 · **Primary irritant effect:**

 · **on the skin:** Irritant to skin and mucous membranes.

 · **on the eye:** Irritating effect.

 · **Sensitization:** No sensitizing effects known.

 · **Additional toxicological information:**

 · **Carcinogenic categories**

 · **IARC (International Agency for Research on Cancer)**

2B

 · **NTP (National Toxicology Program)**

Substance is not listed.

 · **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

12 Ecological information

 · **Toxicity**

 · **Aquatic toxicity:**

108-10-1 Methyl isobutyl ketone

EC50/96 hr	980 mg/l (<i>scenedesmus subspicatus</i>)
	400 mg/l (<i>Selenastrum capricornutum</i>)
LC50/24 h	5000 mg/l (<i>daphnia magna</i>)
	460 mg/l (goldfish)
LC50/96 h	505 mg/l (fathead minnow)
	505-540 mg/l (<i>Pimephales promelas</i>)
	600 mg/l (<i>Salmo gairdneri</i>)

 · **Persistence and degradability** No further relevant information available.

 · **Behavior in environmental systems:**

 · **Bioaccumulative potential** No further relevant information available.

 · **Mobility in soil** No further relevant information available.

 · **Additional ecological information:**

 · **General notes:**

Water hazard class 1 (Assessment by list): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

 · **Results of PBT and vPvB assessment**

 · **PBT:** Not applicable.

 · **vPvB:** Not applicable.

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/12/2023

Reviewed on 05/12/2023

Trade name: MIBK



 · **Other adverse effects** No further relevant information available.

(Contd. of page 7)

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
 Must not be disposed of as regular garbage/trash. Do not allow product to reach sewage system.
 Disposal must be made in accordance with Federal, State, and Local regulations.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made in accordance with Federal, State, and Local regulations.

14 Transport information

- | | |
|--|---|
| · UN-Number | |
| · DOT, ADR, IMDG, IATA | UN1245 |
| · UN proper shipping name | |
| · DOT, ADR, IMDG, IATA | METHYL ISOBUTYL KETONE |
| · Transport hazard class(es) | |
| · DOT | |
| |  |
| · Class | 3 Flammable liquids |
| · Label | 3 |
| | |
| · ADR, IMDG, IATA | |
| |  |
| · Class | 3 Flammable liquids |
| · Label | 3 |
| · Packing group | |
| · DOT, ADR, IMDG, IATA | II |
| · Environmental hazards: | |
| · Marine pollutant: | No |
| · Special precautions for user | Warning: Flammable liquids |
| · Hazard identification number (Kemler code): | 33 |
| · EMS Number: | F-E,S-D |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |

(Contd. on page 9)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/12/2023

Reviewed on 05/12/2023

Trade name: MIBK

(Contd. of page 8)

· UN "Model Regulation": UN1245, METHYL ISOBUTYL KETONE, 3, II

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

- Section 355 (extremely hazardous substances):

Substance is not listed.

- Section 313 (Specific toxic chemical listings):

Substance is listed.

- TSCA (Toxic Substances Control Act): All ingredients are listed or comply with TSCA regulations.

- Hazardous Air Pollutants

Substance is listed.

- Proposition 65

- Chemicals known to cause cancer:

Substance is listed.

- Chemicals known to cause reproductive toxicity for females:

Substance is not listed.

- Chemicals known to cause reproductive toxicity for males:

Substance is not listed.

- Chemicals known to cause developmental toxicity:

Substance is listed.

- Carcinogenic categories

- EPA (Environmental Protection Agency)

I

- TLV (Threshold Limit Value)

Substance is not listed.

- NIOSH-Ca (National Institute for Occupational Safety and Health)

Substance is not listed.

- Massachusetts State Right To Know List

108-10-1 Methyl isobutyl ketone

- New Jersey State Right To Know List

108-10-1 Methyl isobutyl ketone

- Pennsylvania Hazardous Substances List

108-10-1 Methyl isobutyl ketone

- California SCAQMD Rule 443.1 VOC's: 800 g/l; vapor pressure 14.5 mm Hg @ 20C (68)F

- GHS label elements

The substance is classified and labeled according to the Globally Harmonized System (GHS).

(Contd. on page 10)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/12/2023

Reviewed on 05/12/2023

Trade name: MIBK

(Contd. of page 9)

Hazard pictograms

Signal word Danger
Hazard-determining components of labeling:

Methyl isobutyl ketone

Hazard statements

H225 Highly flammable liquid and vapor.

H332 Harmful if inhaled.

H319 Causes serious eye irritation.

H351 Suspected of causing cancer.

H336 May cause drowsiness or dizziness.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P310 If swallowed: Immediately call a poison center/doctor.

P302+P352 If on skin: Wash with plenty of soap and water.

P304+P341 If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P370+P378 In case of fire: Use to extinguish: Alcohol resistant foam, Fire-extinguishing powder, Carbon dioxide.

P403+P235 Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing SDS: Product safety department
Contact: Tom Cole, EHS Manager (tcole@kayakuam.com)
Revision History:

The manufacturer's information in Section 1, the product hazard information in Section 2 and the component hazard information in Section 3 have been updated.

Date of preparation / last revision 05/12/2023
Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

(Contd. on page 11)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/12/2023

Reviewed on 05/12/2023

Trade name: MIBK

(Contd. of page 10)

DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
Flammable Liquids 2: Flammable liquids – Category 2
Acute Toxicity - Inhalation 4: Acute toxicity – Category 4
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A
Carcinogenicity 2: Carcinogenicity – Category 2
Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3

US